

USSR

UDC: 53.082.4

KOLDASOV, G. D., PETROVSKIY, B. S., Leningrad Institute of Aviation Instrument Building

"A Method of Measuring Mechanical Stresses"

Moscow, Otkrytiya, Izobreteniya, Promyshlennyye Obraztsy, Tovarnyye Znaki, No 5, Feb 72, Author's Certificate No 364841, Division G, filed 31 Dec 70, published 28 Dec 72, p 121

Translation: This Author's Certificate introduces a method of measuring mechanical stresses in ferromagnetic solids by setting up ultrasonic vibrations and measuring the amplitude of the electric signal of a noncontact magnetoelastic induction pickup in the object to be inspected. As a distinguishing feature of the patent, provision is made for measuring dynamic mechanical stresses from the action of the ultrasonic waves. The test object is subjected to the localized action of alternating heteropolar pulses of an external magnetic field with amplitudes which produce a zero electric signal. The object is then subjected to the simultaneous action of an ultrasonic wave which induces the mechanical stresses to be checked, and an external magnetizing pulse chosen to be shorter than the duration

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KOLDASOV, G. D., PETROVSKIY, B. S., USSR Author's Certificate No 364841

of action of the ultrasonic wave. After this, ultrasonic vibrations are set up in the object to be inspected and the amplitude of the electric signal is measured to determine the mechanical stresses. The patent also covers a modification of this procedure distinguished by the fact that measurement accuracy is improved by choosing the length of the localized zone in which mechanical stresses are determined so that it is less than half the wavelength of the ultrasound which induces these stresses.

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UDC 621.317.421

PETROVYKH, S. V., and KOLDASOV, G. D.

"Ferrograph"

Tr. Leningr. In-t Aviats. Priborostr. [Works of Leningrad Institute of Aviation Instruments], 1972, No 74, pp 194-197 (from Referativnyy Zhurnal, No 11, Nov 72, 32. Metrologiya i Izmeritel'naya Tekhnika. Single Issue. Abstract No 11.32.1020)

Translation: An installation for oscillographing hysteresis loops of flat-film magnetic elements, its functional diagram, technological characteristics, and measuring error are investigated. A new method to measure magnitudes of residual induction (I) of elements is suggested which increases the measuring exactness. The point of the suggested method consists in the following: into the amplification loop of signals proportional I in the magnetic element, is introduced a summator for summarizing the mentioned signals and signals proportional to the remagnetizing field. By regulating the amplitude of the signal proportional to the remagnetizing field, a transformation of the signal proportional to I will be obtained by which the magnitude of its amplitude will be proportional to the magnitude of the residual I in the element. The error of the photographer, when measuring I, is in the discussed case not 1/2

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PETROVYKH, S. V., and KOLDASOV, G. D., Tr. Leningr. In-t Aviats. Priborostr, 1972, No 74, pp 194-197

determined by the error of electronic schemata, but by the error in measuring the dimensions of magnetic elements. Three illustrations, four bibliographical references.

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UDC 681.327.66'13:53.088.7

USSR

YESIKOV, V. B., KOLDASOV, G. D., and PETROVSKIY, B. S., Leningrad Institute of Aviation Machine Building

"A Device for Investigating the Reciprocal Effect of Signals Transcribed on Ferromagnetic Material"

USSR Author's Certificate No 281540, Filed 17 Feb 69, Published 18 Jan 71 (from Referativnyy Zhurnal -- Avtomatika, Telemekhanika, i Vychislitel'naya Tekhnika, No 8, 1971, Abstract No 8B123 P)

Translation: There is a well-known device for investigating the reciprocal effect of signals transcribed on ferromagnetic material. It consists of pulse generators, amplifiers [y-ley], power sources, magnetization coils, and read-out coils. The purpose of the present invention is to simplify the hardware of this device; to simplify the methods used to measure, for research purposes, the effect which all the surrounding elements have on a selected element; and to regulate the forces acting on this element. This is achieved in the following way: the part of the ferromagnetic material that is not used for storage is covered with coils connected to the mechanical-wave activator, while the part of the ferromagnetic material that is used for storage is covered with active magnetizing and read-out coils.

I/I

UDC 612.015.348.014.426.014.46:615.849.1/015.25

USSR

KOLDAEV, V. M.

"The Effect of Antioxidizer on Protein Metabolism After Microwave Irradiation"
Moscow, Voprosy Kurortologii, Fizioterapii, i Lechebnoy Fizicheskoy Kul'tury,
No 3, May/Jun 71, pp 246-248

Abstract: The research objective was the study of the influence of preparatory antioxidant on changes in the levels of protein fractions and unstable globulins in the blood serum of laboratory animals after microwave irradiation. The antioxidant was cystamine dichlorohydrate. Five experimental series were conducted on 100 male white rats weighing 170-180 g. The first series used 10 animals as controls. The second used 20 rats studied 3 minutes and 24 hours after 12-minute irradiation. In the third series, 20 rats were studied 25 minutes and 24 hours after cystamine induction. In the fourth, 30 rats were injected with cystamine, and then irradiated 10 minutes later for 12 minutes; these rats were studied 3 and 6 minutes, and 24 hours following irradiation. In the fifth series 30 rats were studied 3 and 6 minutes, and 24 hours following a 24 minutes irradiation. Cystamine injection prior to irradiation causes increased displacements in protein metabolism, evidence of

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USSR

KOLDAYEV, V. M., Voprosy Kurortologii, Fizioterapii, i Lechebnoy Fizicheskoy Kul'tury, No 3, May/Jun 71, pp 246-248

increased organismic sensitivity to a electromagnetic field when affected by the antioxidant: introduction of biologically active antioxidants prior to irradiation apparently increases the effect on the organism of UHF electromagnetic fields.

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USSR

UDC: 612.014.426612.14.467:612.273

KOLDAYEV, V. M., Ryazan' Medical Institute imeni Academician I. P. Pavlov

"The Effect of an Ultrahigh-Frequency Electromagnetic Field on Rats During Shifts in the Intensity of Oxidation Processes in the Organism"

Moscow, Byulleten' Eksperimental'noy Biologii i Meditsiny, Vol 70, No 11, Nov 70, pp 69-70

Abstract: The survival time of rats in UHF electromagnetic field (wavelength, 12.6 cm; intensity, 150 mw/cm²) was studied after intervention in the exodation-reduction processes by altering the concentration of oxygen in inhaled air and by administration of cystamine (130 mg/kg) or S, β -aminoethylisothiuronium (200 mg/kg) 10 min before irradiation. The lifespan of the animals increased by a factor of 1.3 over that of the controls, in an atmosphere with a high oxygen content, but decreased by a factor of 1.4 in an atmosphere with a low oxygen content. The lifespan decreased more than twofold when the animals were injected intraperitoneally with cystamine or S, β -aminoethylisothiuronium before irradiation. Thus, resistance to the injurious effects of UHF electromagnetic field is largely determined by the intensity of the exergonic oxidation processes in the tissues.

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USSR

UDC 669.292.053.2

SUKHARNIKOV, YU. I., KUNAYEV, A. M., and KOLDOESKAYA, K. G.

"Investigation of the Composition and Structure of the Products of Coreduction of Vanadium Ores and Karatau Phosphorites"

Issledovaniye sostava i struktury produktov sovmestnogo vosstanovleniya vanadiyevykh rud i fosforitov Karatau (cf. English above), Institute of Metallurgy and Beneficiation of the Kazakh Academy of Sciences, Alma-Ata, 1970, 13 pp., ill., bibliogr., 5 nazv. (from RZH-Metallurgiya, No 11, Nov 70, Abstract No 11G165 DEP)

Translation: Results are presented of an investigation of some features of the process of cereduction of V ore and Karatau phosphorite. The process of formation of the metal phase and change in its composition is considered as far as the reduction of Fe, V, and P oxides is concerned. In the case of coreduction of V ore and phosphorite, the presence of V in the alloy is already observed at 1200°. Alleviated reduction of V in the given case is explained by the presence of large quantities of P, which possesses high bonding to V force, and also by faster and easier formation of the hydroxycarbide phase (due to the presence of ready C mixture and Fe, V, and P oxides in V ore) with the formation of which the reaction of V oxide reduction takes place. The rate constants are determined and the energy of activation of V reduction is calculated. (38 kcal/mole). 8 ill., 2 tables.

Authors' abstract

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USSR

UDC 669.295.046.43

RUBAN, N. N., DAVYDOVA, T. YA., CHERNYSHOVA, T. A., KOPYLOVA, YE. A.,
KOLDOBSKAYA, K. N.

"Solubility of Titanium Tetrachloride in Melts of Alkali and Alkaline-Earth Metals"

O rastvorimosti chetyrekhkhloristogo titana v rasplavakh shchelochnykh i
shchelочно-zemel'nykh metallov, Institute of Metallurgy and Refining,
Kazakh SSR Academy of Sciences, Alma-Ata, 1970, 83 pp, ill, 11-entry
bibliography (from RZh-Metallurgiya, No 4, Apr 71, Abstract No 4G227DYeP)

Translation: The results of studying $TiCl_4$ solubility in melts made up of a mixture of chlorides of alkali and alkaline earth metals, which has significance in the processes of chlorinating raw material containing Ti and when purifying $TiCl_4$, are discussed. The solubility of $TiCl_4$ depends little on the temperature or the composition of the solvent. It depends to some extent on the duration of the experiments. According to infrared spectroscopic and petrographic analysis data, the solubility of $TiCl_4$ in a melt of chlorides of alkali and alkaline earth metals is directly related to the presence of residual water in it. There are 6 illustrations, 5 tables, and an 11-entry bibliography.

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KOLDOBSKY, S. Z.

Medical Service.

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Laureate-Colonel of the Medical Service, S. Z. ~~Winters~~ and Lieut. - Colonel of the Medical Service, A. C. ~~Winters~~, - in the use of contrast holography.

As a contrast medium in hysteroangiography, we use a mixture of iodolipic, vegetable oil (from 3 to 6 ml each) and positive osmolarity - prombraline (C. E. F.). The mixture has become in fact antinephrotic and a vast puncture is made in the uterus. If any pathological secretion is present, it is drawn out. The contrast picture is then improved by means of a Koltsova's needles, with a puncture of the median wall of the uterus at the level of the lower uterine segment. The pictures are made in the two usual projections. With the patient lying down, for an absolute check of upper uterine segments, we use the oblique projection recommended by S. I. Aleksyev and A. A. Solov'ev. Evaluation of the results of contrast hysteroangiography is carried out in taking account of the clinical data.

A total of 59 persons were examined by this method — 51 of them in the unit heretofore and 8 — in the outpatient clinic. In six cases, because of technical flaws, the pictures proved uninterpretable. A thickening of the mucous tissue covering the sinuses, due to inflammation, was found in 17 cases. A purulent-polyoid process was recorded in 17 other cases, cystic formations in 11, chronic polypoiditis — in 6, and the remaining 10 cases showed no changes in the nasal sinuses.

The X-ray data were confirmed in subsequent surgery. The contract substances we are using enable us to separate the use of local anesthesia, a substance which promotes adequate contract — as a local anesthetic, and easily covers the walls and contours of the sinuses, and permits the use of more powerful — penicillin (or some other antibiotic) which increases the viscosity of the oily mixture and strengthens its therapeutic effects.

Received in June 1959.

J-9605

108
LDR 616.833.24

Captain of the Medical Service V. A. Gilyarov. Connection between pathology of the spinal cord and the lumbar region and anomalies in the spine.

Out of 72 patients suffering from lumbar radiculitis, 25 were found to have anomalies of the lumbar region of the spine. In 19 of these 25 cases we found evidence of spinal bifida occulta involving a single arch, in 3 cases -- "split" vertebrae were involved, in 2 -- there was a combination of spina and sacralization, and in one other case -- there was sacralization.

In 15 of the patients the disease was due to exposure to greatly cold temperatures. In 7 cases it was due to lifting excessive weights, in 4 other cases the cause could not be determined.

The clinical picture of lumbar radiculitis in the presence of anomalies in the corresponding vertebrae, was characterized by the following manifestations: subacute beginning of the disease; short duration of the attack; later, continuous pain in the lumbar region -- more pronounced in the mornings, on getting out of bed, or after a long period of sitting down, and declining after physical exercise; periodic aggravation caused by too low a temperature or the lifting of heavy loads; localized pain on palpation of the inter-spinal spaces at the point of the anomaly.

In our opinion, anomalies of the lumbar sector of the spine should not be regarded as the basic cause of lumbar radiculitis. They may act as a contributing factor in the case of trauma of the spine resulting from excessive strain, lifting excessive loads, or being exposed to excessively cold temperatures.

Received in October 1968.

KOLDANOV, A.

(Col. Gen.)

Mil

WATCHING THE CAPITAL'S SKIES

by Col-Gen A. A. Koldanov, Commander, Moscow PVO District,
Winner of Order of Lenin, Hero of the Soviet Union

In the heroic history of the Soviet people, the most difficult trial which has fallen to their lot was the great Patriotic War against the German fascist aggressor, while one of its brightest pages is the historical victory of our troops near Moscow. Thirty years have passed since that time. The years have not eclipsed the majesty of the battle which took place in the fall and winter of 1941-1942 over an extensive territory with unprecedented intensity. The great feat of our people stands before us today in an even more brilliant light.

The victory near Moscow was remarkable evidence of the great military skill of Soviet soldiers and the indisputable moral superiority of our army over the army of the fascist aggressor. This glorious victory was the victory of our social and state order and our communist ideology over the social and state order of Hitler's Germany and over the fascist ideology. It was acquired by the unshakable will and leadership of our Communist Party which united the Soviet people and mobilized all the resources of the country to rout the enemy.

The party, people, and army did everything possible to defend Moscow. The victory at Moscow was of world historical importance. It was precisely there that the Nazi army, at the zenith of its fighting strength, suffered its first serious defeat. The beginning of the fundamental turning point in the course of World War Two and the great Patriotic War was seen at the walls of the capital. The victory near Moscow was the first step on the road to the Soviet Union's final victory over Nazi Germany. It demonstrated that the Soviet Union and its army were the only

force capable of defeating the German fascist monster. As a result of this victory, the reputation of the USSR and its influence in the solution of international problems rose sharply. The anti-fascist coalition was strengthened. The anti-fascist struggle in countries occupied by Germany intensified, and the resistance movement to the Nazi regime began to expand everywhere.

The victory won near Moscow sent into history as the greatest feat of the people of the world's first socialist state and their armed forces. Moscow truly deserved the title and honorable title of hero city. The fate of the warriors who fought at Moscow will not fade through the ages.

The victory of the battle near Moscow and the military and political consequences. History knows no other example of military events as long as during the defense of Moscow, about a long time of German military failed. Such an outstanding victory was achieved.

The victory near Moscow was not only a tactical and an accident, as many political forces and military experts in the capitalist countries have claimed and still claim. It was based on the invincible unity of the Soviet people and the vitality of the Soviet social and state system. In the battle near Moscow, the best traits of the Soviet people, their unconquerable faith in the triumph of Lenin's ideas and the ideals of communism, their unending courage and valor, and their heroic heroism were manifested.

Along with fighting men of the Soviet army and partisans, the working people of Moscow and Moscow province demonstrated exceptional steadfastness in battle and selflessness in labor during the struggle with the fascist aggressor. Tens of thousands of Moscow citizens poured into the ranks of the home guard. During those perilous days, blue collar workers, factory workers, intelligentsia, women and young people, all the working people of the capital and district, guided by party organizations, worked day and night at full intensity to forge the victory. They had one desire and one aim -- to destroy the enemy.

The immortal feat of the defenders of Moscow, who staunchly defended the capital, will always serve as an example of boundless devotion to the socialist homeland.

Personnel of the Moscow TVZ 2001, Gant and the leadership of fighter aviation, anti-aircraft artillery, and podrazdelnyye of air observation warning and communications, anti-aircraft searchlight, barrage balloon, and

USSR

UDC 532.593

KOLDUNOV, S. A., SHVEDOV, K. K., and DREMIN, A. N.

"Decomposition of Porous Explosive Materials Under the Action of Shock Waves"

Novosibirsk, Fizika gorenija i vzryva, No 2, 1973, pp 295-304

Abstract: The reason for this investigation into the decomposition processes of explosives under the action of shock waves is that it is important for the solution of many basic problems in detonation theory and the practical use of explosives. A method is here proposed for investigation explosive transformations occurring behind the shock wave front. No preliminary assumptions are made, and the method is therefore valid for various explosives with any charge structure. The essence of the method is to obtain data on the energy release in the shock-compressed material by recording the gas dynamic changes behind the rectangular-profiled front of the shock wave at the interface between the inert material and the exploding material. Measurement of the massive velocity of this interface is achieved by electromagnetic means. A drawing of the experimental equipment is given together with a table of the shock wave characteristics. The explosives used were ammonium nitrate, TNT, 1/2

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KOLDUNOV, S. A., et al, Fizika gorennya i vzryva, No 2, 1973, pp 295-304

Tetryl, hexogen, and TEN; physical details of each are given. It is concluded that the energy yield immediately after the shock wave front is the consequence of local heating arising directly in the explosive, and that the presence of pores promotes local dissipation of the shock wave energy.

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1/2 029 UNCLASSIFIED PROCESSING DATE--30OCT70
TITLE--CODEPOSITION OF BISMUTH AND ANTIMONY FROM PERCHLORATE FLUORIDE
SOLUTIONS -U-
AUTHOR--(02)--KOCHEGAROV, V.M., KOLDYNSKAYA, T.M.
COUNTRY OF INFO--USSR
SOURCE--ELEKTROKHIMIYA 1970, 6(2), 185-7
DATE PUBLISHED-----70
SUBJECT AREAS--CHEMISTRY
TOPIC TAGS--BISMUTH, ANTIMONY, ELECTRODEPOSITION, CHEMICAL REACTION RATE,
PERCHLORATE, FLUORIDE, METAL ELECTRODE, COPPER
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--1998/1145 STEP NO--UR/0364/70/006/002/0185/0187
CIRC ACCESSION NO--AP0121704
UNCLASSIFIED

2/2 029

UNCLASSIFIED

PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AP0121704

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE CODEPOSITION OF BI AND SB FROM PERCHLORATE FLUORIDE SOLNS. CONTG. 0.1M BI PRIME3 POSITIVE PLUS 0.4M SB PRIME3 POSITIVE WAS STUDIED. FACTORS CONSIDERED WERE THE EFFECTS OF GAS D., TEMP., CONCN. OF SOLN., SHIFT IN COMPN. OF THE ALLOY, AND THE CURRENT EFFICIENCY. A CU CATHODE PT ANODE SYSTEM WAS USED. INCREASING SOLN. TEMP. DECREASES THE SB CONTENT IN THE DEPOSIT OVER A WIDE RANGE OF C. D. INCREASING THE C. D. HAS A FAVORABLE EFFECT ON THE YIELD OF SB IN THE ALLOY, THAT IS, THE RATE OF SB DEPOSITION INCREASES WHILE THAT OF BI REMAINS APPROX. CONST. IN ALLOYS CONTG. LARGE CONTENTS OF SB, WHERE BI IS BEING DEPOSITED AT THE LIMITING CURRENT, THE DEPOSIT WAS OF HIGH QUALITY OVER A WIDE RANGE OF C. D. (0.1-3 A-DM PRIME2) AND TEMP. (20-60DEGREES). THE DEPOSITS WERE COMPACT, DULL BUT EASILY POLISHED, AND STRONGLY ADHERENT TO CU. FACILITY: RYAZAN, RADIOOTEKH. INST., RYAZAN, USSR.

UNCLASSIFIED

USSR

UDC 621.791.75

SMIRNOV, A. P., PAVLOV, A. S., KOLEDENKOV, A. S., and BOYKO, V. V.

"Semiautomatic Shot-Arc-Welding of VMS5 High-Strength Steel With Consumable Electrode in Gaseous Mixtures"

Kiev, Avtomaticheskaya Svarka, No 4 (241), Apr 73, pp 70-71

Abstract: The influence of the composition of gaseous protective mixtures on the strength of VMS5 stainless steel joints welded with consumable electrodes was investigated at the Gor'kiy Aviation Plant. Effects of various mixtures on dimensions of the weld form were studied on microsections of cylinders, welded on 5-mm-thick plates, in mixtures of pure Ar, Ar+He, Ar+O₂, and Ar+CO₂. Qualitatively best results were found on specimens welded in Ar+He. This is achieved as the result of the high burning stability of the arc, its high thermal energy, and the good fluidity of the metal bath. Specimens welded in pure Ar had lower strength, specimens welded in Ar+CO₂ possessed the lowest plasticity, and specimens welded in Ar+O₂+CO₂ showed the smallest angle of bend. Mixes of Ar+CO₂ and Ar+O₂ are not recommended for welding VMS5 steel. One figure, two tables, one bibliographic reference.

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USSR

UDC:537.226+537.311.33]:539.16.04

DUDKO, G. V., CHEREDNICHENKO, D. I., BORISOV, N. A., KOLEGAYEV, M. A.

"Influence of Electron-Beam Heating on the Structure of Germanium"

Materialy. Vses. Soveshch. Po Defektam Struktury v Poluprovodn., 1969.
Ch. 2 [Materials of All-Union Conference on Structural Defects in Semiconductors, 1969, Part 2 -- Collection of Works], Novosibirsk, 1970, pp. 104-110 (Translated from Referativnyy Zhurnal Fizika, No. 11, 1970, Abstract No. 11 Ye. 1076 by A. Shub)

Abstract: The mean density of dislocations N and conditions of their formation are determined on the basis of analysis of the heat field excited in a plate by surface electron-beam heating. Calculation performed for Ge gives a value of N of about $1 \cdot 10^7 \text{ cm}^{-2}$. The result produced agrees well with the experimentally determined value of N for n-type Ge, bombarded with a flat electron beam in the following mode: $U = 10 \text{ kv}$, $I = 35 \text{ ma}$. Dislocations are generated within the temperature range $0.6\text{-}0.75 \text{ m.p.}$ It is demonstrated that the defect structure in the irradiated zone is primarily a dislocation structure.

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K
UDC: 536.4:621.791.85:620.18

DUDKO, G.V., KOLEGAYEV, M.A., and CHEREDNICHENKO, D.N., Taganrog

"Possible Mechanisms in the Formation and Distribution of Defects in Silicon and Germanium During Electron-Beam Heating"

Moscow, Fizika i Khimiya Obrabotka Materialov, No 2, Mar-Apr 70, pp 25-29

Abstract: The effects of electron-beam processing on material structure are important in view of the intensive use of this technique at the present time. The authors studied the actual structure of Ge and Si single crystals treated with an electron beam (4-8 kv, 2 ma, 0.5-2.0 sec, vacuum of $5 \cdot 10^{-5}$ mm Hg). Defects $5 \times 5 \times 0.5$ mm were produced in the {111} plane. There was no disturbance of crystalline structure even upon surface fusion. The sharp increase in dislocation density at points of treatment is believed to be due primarily to thermal stresses.

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1/2 038 UNCLASSIFIED PROCESSING DATE--30OCT70
TITLE--POSSIBLE MECHANISMS OF THE FORMATION AND DISTRIBUTION OF DEFECTS IN
SILICON AND GERMANIUM DURING ELECTRON BEAM HEATING -U-
AUTHOR--(03)-DUDKO, G.V., KOLEGAYEV, M.A., CHEREDNICHENKO, D.I.
COUNTRY OF INFO--USSR
SOURCE--FIZ. KHIM. OBRAB. MATER. 1970, (2), 25-9
DATE PUBLISHED-----70
SUBJECT AREAS--PHYSICS, MATERIALS
TOPIC TAGS--ELECTRON BEAM, METAL HEATING, SINGLE CRYSTAL, SILICON,
GERMANIUM, METAL MELTING, MICROSCOPY, CRYSTAL LATTICE DEFECT
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--1998/0946 STEP NO--UR/0472/70/000/002/0025/0029
CIRC ACCESSION NO--AP0121548
UNCLASSIFIED

2/2 038

UNCLASSIFIED

PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AP0121548

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. STRUCTURAL DEFECTS PRODUCED IN GE AND SI SINGLE CRYSTALS (SECTIONED ALONG THE (111) PLANES) DURING LOW ENERGY ELECTRON BEAM BOMBARDMENT WAS STUDIED. THE SAMPLES MAINTAINED THEIR SINGLE CRYSTALLINITY IN SPITE OF SOME SURFACE MELTING. THE DISLOCATIONS WERE REVALED BY CHEM. ETCHING AND COUNTED UNDER A MICROSCOPE. THERE WAS A ZONE OF DISLOCATIONS, EXTENDING INTO THE BODY OF THE CRYSTAL, AT THE POINT WHERE THE BEAM STRIKES THE CRYSTAL. THE PRESSURE OF THE ELECTRON BEAM IS TOO LOW TO CAUSE THE DISLOCATIONS; INSTEAD, THE DEFECTS ARE PROBABLY DUE TO THERMAL STRESSES AND POSSIBLY TO BENDING OF THE CRYSTALS DURING HEATING.

UNCLASSIFIED

USSR

KOLEMAYEV, V. A., PASHCHENKO, P. D.

"Application of the Results of Modeling of a Three-Phase Queuing System"

Ekonomika i Mat. Metody [Economics and Mathematical Methods], 1973, Vol 9, No 1, pp 170-175 (Translated from *Referativnyy Zhurnal Kibernetika*, No 6, 1973, Abstract No 6V232, by the authors).

Translation: Modern production is characterized by combined functioning of machines automatically performing the basic working operations, and man, who controls the machines and adjusts them. This article studies a man-machine system consisting of m identical devices (machine tools, apparatus) and a human operator who performs the initial and final operations (for example, places the blank in the machine and removes the finished part from the machine). Each requirement arriving at the system passes through three successive phases of servicing, the servicing time in each phase being a random quantity with a fixed distribution. Problems related to optimization of such a system are studied.

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KOLEMEYEVA, L.YA.

EFFECT OF NARCOTICS ON ANIMAL BODY REACTIVITY DURING
HYPNOSIS

(Article by L.Ya. Kolemeyeva and R.A. Seydmetov; Moscow, Actual'nyye Voprosy Sovetskoy Biologii i Meditsiny [Current Problems in Soviet Biology and Medicine], Moscow, 1971, pp 126-127)

It has been demonstrated that body reactivity to drug with exposure to such flight factors as acceleration, vibration, noise, hypoxia and radiation changes considerably (V. V. Parin, et al., 1964; V. Ye. Belay, et al., 1966, 1967; L. V. Pastushenkov, 1967; I. S. Gurin, et al., 1968).

We felt it desirable to investigate the influence of drugs on body reactivity in animals during hypnosis of different durations.

In the experiments we studied the classical narcotic which have a predominant effect on different parts of the central nervous system (hexamyl, chloral hydrate and urethane).

The experiments were made on 1,113 white male rats weighing 150-200 g. The experimental animals were kept in "hypokinetic" cages and the control animals under ordinary conditions. The animals were fed a standard diet.

On the first, fifth, tenth, fifteenth, thirtieth, forty-fifth and sixtieth days after onset of the experiment the rats were intraperitoneally injected with narcotics in the following doses: hexamyl -- 360-560 mg/kg, chloral hydrate -- 520-700 mg/kg, urethane -- 1,200-2,000 mg/kg.

The change in animal body reactivity was judged from LD50 (the lethal dose causing a 50% death of the animals in the experiment and in the control) and from the time of onset of sleep.

SPRS 56449 47
14 JULY 72

KOLEMEYEVA, L. YA.

RESPONSE OF THE ANIMAL BODY TO CENTRAL NERVOUS SYSTEM
STIMULANTS DURING HYPOKINETIA

Article by L. Ya. Kolemeyeva; Moscow, Akademiya Voennoy
Kosmicheskoy Svyazi i Vozdukh (Current Problems in Space
Biology and Medicine), Moscow, 1971, pp 127-135.

A study was made of central nervous system stimulants
with a predominant effect on different parts of the central
nervous system (strychnine in doses from 2.5 mg/kg to 11.5 mg/
kg, phenamine -- from 15 mg/kg to 85 mg/kg, caffeine -- from
540 mg/kg to 760 mg/kg).

The experiments were conducted on 1, 1/6 white male
rats weighing 150-200 g. The experimental animals were con-
tained in "hypokinetic" cages and the control animals were
kept under ordinary conditions, in groups. All the animals
were fed a standard ration.

The rats were injected intraperitoneally with the stim-
ulant preparations on the first, fifth, tenth, fifteenth, and
twentieth, forty-fifth and sixtieth days after onset of the exper-
iment.

The change in body response of the animals to the in-
jection of stimulants was evaluated from the time of onset of
the following reactions:

in the case of strychnine injection -- from the onset
of spasms,
in the case of phenamine injection -- from the onset
of "arena" movements,
in the case of caffeine injection -- from the onset of
adynamia.

SPRS 56499
14 JULY 72

USSR

UDC 612.744+612.825.4

BERDINA, N. A., KOLENKO, G. L., KOTS, YA. M., KUZNETSOV, S. P., RADIONOV, I. H., SAVCHENKO, A. P., and TKHOREVSKIY, V. I., Department of Human and Animal Physiology, Biology-Soil Faculty, Moscow State University; Physiology Department of Roentgenology and Radiology, First Moscow Medical Institute; Physiology of Work Section, Institute of Industrial Hygiene and Occupational Diseases, Academy of Medical Sciences USSR, Moscow

"Efficiency and Blood Supply of Skeletal Muscles During Emotional Stress Induced by Mental Arithmetic"

Leningrad, Fiziologicheskiy Zhurnal SSR imeni I. M. Sechenova, No 4, 1971, pp 546-555

Abstract: Emotional stress arising from mental addition and subtraction produced in most human subjects an increase in the volumetric blood flow rates (by 85% on the average) in resting muscles of the forearm. When mental arithmetic was combined with voluntary muscular exertion (on a squeeze dynamometer) or isometric contraction of the antebrachial muscles elicited by electric stimulation of the nerve, muscular performance increased by 46 and 155%, respectively. This happened in only those subjects in whom mental

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USSR

BERDINA, N. A., et al., Fiziologicheskii Zhurnal SSR imeni I. M. Sechenova, No 4, 1971, pp 546-555

arithmetic intensified the blood flow in resting muscles. Intraarterial injection of atropine markedly slowed the increase in rate of blood flow in resting muscles due to mental arithmetic. It also reduced the length of time exertion on the squeeze dynamometer could be sustained. Stress-induced muscular efficiency is ascribed to increased blood flow not in the working muscles but in the resting muscles as a result of change in muscle metabolism brought about by the sympathetic nervous system.

2/2

USSR

KOLENKO, Ye., Doctor of Technical Sciences, Director of the Laboratory of the Institute of Semiconductors, Academy of Sciences USSR

"Electronic Cold in Medicine"

Moscow, Kazakhstanskaya Pravda, 18 Aug 70, p 4

Translation: Electronic cooling, a method for obtaining artificial cold with the aid of a direct electrical current passed through a semiconductor, first gained scientific and technical significance in the Soviet Union. Now it is already being widely used in various fields of science and technology in many countries. Medicine has become one of the solid users of electronic cold.

Physicians discovered long ago that artificial cooling in therapy or surgery opens up new possibilities in the struggle against human sicknesses. Special fields of medicine even grew up (cryotherapy, cryosurgery). Krios means cold in Greek.

Freon compressors were generally used to obtain artificial cold. However, they often cannot be used in cryotherapy because of their cumbersome dimensions,
1/4

USSR

KOLENKO, Ye., Kazakhstanskaya Pravda, 18 Aug 70, p 4

great weight, considerable power consumption, and the impossibility of even temperature control. Electronic coolers, however, can be the size of a thimble and weigh only a few grams. They consume power reckoned in watts and, what is most important, they permit smooth temperature control to minus seventy degrees. These valuable features of electronic cooling devices explain the interest in them for cryotherapy.

Fourteen types of electronic coolers have been developed at the Leningrad Institute of Semiconductors of the Academy of Sciences USSR. They have been used in neurosurgery, ophthalmology, urology, nephrology, plastic surgery, dermatology, histology, and pathological anatomy.

In medical practice it often becomes necessary to delay or even "shut off" the functioning of individual systems of the organism. The only way to do this is to refrigerate the individual sections of the cerebral cortex which direct these functions. The electronic cooler for local hypothermia of the brain is a miniature device which is introduced into an opening in the skull until it comes into contact with the cerebral cortex. The semiconductor

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USSR

KOLENKO, Ye., Kazakhstanskaya Pravda, 18 Aug 70, p 4

cooling element, weighing a total of eight grams, reduces the temperature of the section of the brain to plus five degrees for two to three minutes.

All of us in our childhood have made the following "experiment": to touch a metal object with the tongue during frost. The sad results of this experience are known to all. The tip of the tongue froze to the metal, and the attempts to free it left strong memories. But completely serious operations for removing a cloudy crystalline lens from the eye of a cataract patient are based precisely on the "frozen tongue" effect. The electronic cooling device, which has been referred to as a "thermoelectric cataract remover" is a miniature lever weighing 65 grams. An interchangeable working point of the microcooler rapidly cools to minus 32 degrees. It touches the crystalline lens and it instantaneously simply freezes to the metal point. Now the surgeon only has to remove the crystalline lens from the eye. Later on, with the aid of ordinary glasses, vision is almost completely restored to the patient.

Specialists have become interested in the thermoelectric cooling device, which in size and weight is reminiscent of a man's wristwatch. It can be used in
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USSR

KOLENKO, Ye., Kazakhstanskaya Pravda, 18 Aug 70, p 4

dermatology for treating a number of skin diseases by cooling the infected part of the skin to ten to twelve degrees below the temperature of the body.

An electronic microcooling device has been designed for plastic surgery operations, particularly in cosmetic surgery.

4/4

USSR:

UDC 621.762.001.669.24

AKSENOV, G. I., and KOLEROV, O. K.

"The Processes of Recovery and Recrystallization in Carbonyl Nickel Powder Preforms"

Tr. Kuybyshev. aviats. in-t (Works of Kuybyshev Aviation Institute), 1970, vyp. 42, pp 28-35 (from RZh-Metallurgiya, No 3, Mar 71, Abstract No 3G364 by G. Derkacheva)

Translation: A study is made of processes of recovery and recrystallization in preforms obtained by the pressing of carbonyl nickel powder with bulk weight of 0.8 and 1.44 g/cm³, in comparison with cold-worked specimens of compact nickel made in the form of thin strip. The strip was produced by rolling the powder and sintering for 1 hr at 1350-1400° in an H₂ atmosphere, compaction-rolling the annealed strip, and resintering under the same conditions. Strain percent of the compact specimens was characterized by height shrinkage during rolling. The strain percents under study ranged from 5 to 95%. In specimens obtained by cold compaction of powder, recovery processes begin at room temperature and continue on heating. The temperature range for recrystallization of preform is 350-450°, that of compact specimens 80-170°. Six illustrations. One table. Bibliography with nine titles.

1/1

USSR

UDC: 518.5:681.3.06

KOLEROV, T. Ya., NEZHINSKAYA, M. M.

"Calculation of Current Distribution in an Isolated Pipeline Buried in the Homogeneous Unbounded Earth"

V sb. Mat. obespecheniye avtomatizir. sistem proyektir. elektro- i radiotekhn. ustroystv. Vyp. 3 (Mathematical Provisioning for Automated Systems for the Design of Electrical and Radio Equipment. No 3--collection of works), Kiev, 1970, pp 3-25 (from RZh-Kibernetika, No 9, Sep 71, Abstract No 9V613)

Translation: The paper describes an algorithm and standard program for calculating the electromagnetic field created by the current of a cathode station in an isolated pipeline buried in homogeneous unbounded soil. The problem is formulated as a system of second-order linear integral equations which contain Volterra and Fredholm operators with respect to the unknown quantity -- the voltage drop across the insulation. In this regard, it is assumed that the field is one-dimensional in the pipe, two-dimensional in the insulation, and three-dimensional in the soil.

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USSR

UDC: 518.5:681.3.06

KOLEROVA, T. Ya., NEZHINSKAYA, M. M.

"Calculation of Current Distribution in a Branched Network of Underground Structures"

V sb. Mat. obespecheniye avtomatizir. sistem proyektir. elektro- i radio-
tekh. ustroystv. Vyp. 1 (Software for Systems for Automated Design of
Electrical and Radio Equipment--collection of works, No 1), Kiev, 1970,
pp 75-115 (from RZh-Matematika, No 11, Nov 71, Abstract No 11V857)

Translation: The paper describes an algorithm and program for the case of intersecting underground pipelines. It is assumed that the pipes are electrically connected by a bridge with a controllable resistance of any predetermined value: i. e., they have a mutual electrical effect not only through the ground, but also through a bridge as well. Combined protection of a gas line and a cable is considered by way of example. V. Mikheyev.

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USSR

UDC: 518.5:681.3.06

KOLEROVA, T. Ya., NEZHINSKAYA, M. M.

"Calculation of Current Distribution in a Branched Network of Underground Structures"

V sb. Mat. obespecheniye avtomatizir. sistem proyektir. elektro- i radio-
tekhn. ustroystv (Software for Automating Systems for Design of Electronic
and Radio Equipment), vyp. 1, Kiev, 1970, pp 75-115 (from RZh-Kibernetika,
No 11, Nov 71, Abstract No 11V857)

Translation: The authors describe an algorithm and program for the case
of intersecting subterranean pipelines. The pipes are interconnected by a
bridge with controllable resistance of any predetermined value, i. e. they
have an electrical effect on one another not only through the soil, but
also through bridging. Combined shielding of a gas line and a cable is
calculated by way of example. V. Mikheyev.

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USSR

UDC: 518.5:681.3.06

KOLEROVA, T. Ya., NEZHINSKAYA, M. M.

"Calculation of Current Distribution in an Isolated Pipeline Located in Homogeneous Soil Bounded by the Surface of the Ground"

V sb. Mat. obespecheniye avtomatizir. sistem proyektir. elektro- i radio-
tekhn. ustroystv (Mathematical Provisioning of Automated Systems for
Design of Electrical and Radio Equipment--collection of works), vyp. 1,
Kiev, 1970, pp 26-46 (from RZh-Kibernetika, No 7, Jul 71, Abstract No
7V773)

Translation: The paper describes an algorithm and standard program for
determining voltage drop across the insulation of an isolated pipeline
placed in homogeneous soil parallel to the surface of the ground at a
certain depth. The extent of the effect which the surface has on
the current field in the soil is determined by the method of mirror re-
flection. Appropriate algorithms and a program for the M-20 digital
computer are presented. One illustration. V. Mikheyev.

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USSR

UDC: 518.5:681.3.06

KOLEROVA, T. Ya., NEZHINSKAYA, M. M.

"Calculation of Current Distribution in Two Parallel Underground Structures Connected by Bridges"

V sb. Mat. obespecheniye avtomatizir. sistem proyektir. elektro- i radio-
tekhn. ustroystv (Mathematical Provisioning of Automated Systems for
Design of Electrical and Radio Equipment--collection of works), vyp. 1,
Kiev, 1970, pp 116-135 (from RZh-Kibernetika, No 7, Jul 71, Abstract No
7V774)

Translation: The following problem is considered. Two parallel structures of finite length located at a distance a from each other, electrically bridged together, and placed at a depth h in homogeneous soil bounded by the surface of the ground. Connected to one of these structures is a current source (cathode station or projector) at a distance H from the axis of the first structure. The induced magnetic field is to be calculated. The problem is formulated as a system of linear integral equations of the second kind. The effect of the surface of the ground is taken into account by the method of mirror reflection. An algorithm and program for the M-20 digital computer are described. V. Mikheyev.

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USSR

UDC: 518.5:681.3.06

KOLEROVA, T. Ya.

"Calculation of a Plane-Meridian Quasistationary Electric Field in Piecewise-Continuous Media"

V sb. Mat. obespecheniye avtomatizir. sistem proyektir. elektro- i radio-
tekhn. ustroystv (Mathematical Provisioning of Automated Systems for
Design of Electrical and Radio Equipment--collection of works), vyp. 1,
Kiev, 1970, pp 136-206 (from RZh-Kibernetika, No 7, Jul 71, Abstract
No 7V772)

Translation: The basic problem when calculating a plane-meridian quasi-stationary electric field in piecewise-homogeneous media is formulated as follows. Given: 1) the geometric dimensions and characteristics of the material of the coils and conductors; 2) current distribution in the coils, and the complexes of side emf's acting in the conductors; 3) the complex of induction of the external magnetic field. It is required to find the distribution of current density or the distribution of electric field strength in the conductor cross section. A method is proposed for solving this problem which consists in reducing Fredholm's integral

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KOLEROVA, T. Ya., Mat. obespecheniye avtomatizir. sistem proyektir.
elektro- i radiotekhn. ustroystv., vyp. 1, Kiev, 1970, pp 136-206

equation of the second kind to a system of linear algebraic equations and solving this system by matrix inversion. The corresponding algorithm and program are presented in M-20 digital computer codes. Four illustrations. V. Mikheyev.

USSR

UDC:532.529

BORUNOVA, E. P. and KOLERSKIY, S. V.

"On Problem of Determining Parameters of High-Dispersion Radioactive Aerosols"

Odessa, 11-ya Vses. Konf. po Vopr. Ispareniya, Goreniya i Gaz. Dinamiki Dispersn. Sistem, 1972 (11th All-Union Conference on Problems of Evaporation, Combustion and Gas Dynamics of Dispersion Systems, 1972), 1972, p 12 (from Referativnyy Zhurnal-Mekhanika, 1973, Abstract No ZB1211)

Translation: Investigation was conducted on the possibility of using a set of diffusion batteries and electrostatic precipitators for a complex determination of the following integral parameters of high-dispersion and ultra-high-dispersion radioactive aerosols: ratio of charged and noncharged aerosols, mean diffusion coefficient of charged, noncharged and all aerosols, mean electric mobility of charged aerosols and mean number of elementary charges on one radioactive, charged aerosol particle.

1/2 Estimates were made of errors in determination of integral parameters,

USSR

BORUNOVA, E. P. and KOLERSKIY, S. V., 11-ya Vses. Konf. po Vopr. Ispareniya, Gorennya i Gaz. Dinamiki Dispersn. Sistem, 1972, p 12

limits of their validity were calculated for the case of monodispersed aerosols, systematic errors due to polydispersion of aerosols were investigated. Integral parameters were measured of ultra-high-dispersion radioactive aerosols, which are decay products of radon fission occurring in dustless air of the closed chamber inside of which a radium source was placed. Integral parameters of ultra-high-dispersion aerosols of iodine-137 obtained from a iodine generator were also measured.

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Acc. Nr.

AP0053772

Abstracting Service:
CHEMICAL ABST.

5/70

Ref. Code

UR0366

110924y Anions of dinitromethyl compounds. XV. Synthesis of aryldinitromethanes by the nitration of arylaldoximes with nitrogen pentoxide. Kolotatshova, G. I.; Tselinskii, I. V.; Bagal, L. I. (Leningrad. Tekhnol. Inst. im. Lensovet, Leningrad, USSR). Zh. Org. Khim. 1970, 6(2), 334-40 (Russ).

The reaction of $RCH:NOH$ (I) [R is 2- ClC_6H_4 ; 3- ClC_6H_4 ; 4- ClC_6H_4 ; 2- BrC_6H_4 ; 3- BrC_6H_4 ; 4- BrC_6H_4 ; 2- MeC_6H_4 ; 3- MeC_6H_4 ; 4- MeC_6H_4 ; 2- $MeOC_6H_4$; 3- $MeOC_6H_4$; 4- $MeOC_6H_4$; 3- NCC_6H_4 ; 4- NCC_6H_4 ; 2- FC_6H_4 ; 4- FC_6H_4 ; 2- $O_2NC_6H_4$; 3- $O_2NC_6H_4$; 4- $O_2NC_6H_4$; 5,2- $Cl(O_2N)C_6H_3$; 2,5- $Cl(O_2N)C_6H_3$; 5,2- $Br(O_2N)C_6H_3$; 4,3- $Br(O_2N)C_6H_3$; 3,4- $Br(MeOC_6H_3)$; 3,4- $O_2N(MeO)C_6H_3$; 2,5- $MeO(O_2N)C_6H_3$; 2,4- ClC_6H_3 ; 2,4- MeC_6H_3 ; 2,4,5- $Me_3(O_2N)C_6H_2$; 2,4,3,5- $Me_4(O_2N)_2C_6H_2$; 2,4,5- $(O_2N)_3(MeO)C_6H_2$; 2,3,5- $MeO(O_2N)_2C_6H_2$; 3,5,4- $(O_2N)_3(MeO)C_6H_2$ with N_2O_5] gave $RCH(NO_2)$ (II) and $RCHO$. The yields of II depend on the position of the substituents; *o*-substituted I gave 20-30% II, other I give 45-60% II. Nitration of I (R = 4- $Me_2NC_6H_4$) gave 4,3,5- $Me_2N(O_2N)_2C_6H_2CH(NO_2)$. II give salts, such as $RCK(NO_2)_2$, which react with halogens to give $RC(NO_2)_2X$ (X is Cl or Br). Also I react with CH_3COCH_3 to give $RC(NO_2)_2CH_2CH_2Ac$. CPJR]

REEL/FRAME
19830835

1/2 028 UNCLASSIFIED PROCESSING DATE--11SEP70
TITLE--THE ROLE OF BRONCHONODULAR TUBERCULOSIS IN THE DEVELOPMENT OF
PNEUMOFIBROSES -U-
AUTHOR--KOLESHKO, L. REBANE, L.
COUNTRY OF INFO--USSR
SOURCE--TERAPEVTICHESKIY ARKHIV, 1970, VOL 42, NR 2, PP 21-26
DATE PUBLISHED-----70
SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES
TOPIC TAGS--TUBERCULOSIS, PEDIATRICS, LYMPHATIC SYSTEM, CIRRHOSIS
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--1985/1789 STEP NO--UR/0504/70/042/002/0021/0026
CIRC ACCESSION NO--AP0101836
UNCLASSIFIED

2/2 028

UNCLASSIFIED

PROCESSING DATE--11SEP70

CIRC ACCESSION NO--AP0101836

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. OF 280 CHILDREN AND ADOLESCENTS IN WHOM BRONCHOSCOPY REVEALED DIFFERENT PATHOLOGICAL CHANGES IN THE TRACHEA AND BRONCHI DUE TO TUBERCULOUS AFFECTION OF THE SURROUNDING LYMPHATIC NODES, IN COMPLEX ROENTGENOLOGICAL STUDY (WITH THE EMPLOYMENT OF BRONCHOGRAPHY IN 110 PERSONS) IN 237 CASES (87PERCENT) DEVELOPMENT OF METATUBERCULOUS CHANGES WAS FOUND. THE LATTER WERE OF A DIFFERENT NATURE AND EXTENT OF MARKEDNESS AND FLUCTUATED BETWEEN PARTIAL INTRASEGMENTAL AND MONOSEGMENTAL PNEUMO FIBROSIS (MAINLY IN THE HILUM OF THE THIRD BRONCHO PULMONARY SEGMENT) TO AND COMMON CIRRHOTIC CHANGES OF A POLYSEGMENTAL NATURE IN 79 PERSONS (33PERCENT). THE DATA OBTAINED MADE IT POSSIBLE TO CONSIDER THAT BRONCHONODULAR TUBERCULOSIS NOT INFREQUENTLY LEADS TO THE DEVELOPMENT OF PNEUMOFIBROSIS. WHEN ESTABLISHING SPECIFIC ETIOLOGY OF THESE LESIONS DATA OF ENDOSCOPIC STUDY IS OF GREAT IMPORTANCE.

UNCLASSIFIED

USSR

UDC 632.951:630.576.8

KOLESHKO, O. I., and ANDREYEV, A. S., Belorussian State University and Belorussian Scientific Research Institute of Plant Protection

"The Effect of Organophosphoric Insecticides on Soil Microflora in the Rhizosphere of Hops and on the Crude Hops Crop"

Moscow, Khimiya v Sel'skom Khozyaystve, Vol 11, No 11 (121), 1973, pp 39-40

Abstract: Organophosphoric insecticides amiphos, rogor, and anthio depressed the development of the ammonificators and lowered the ammonification capacity of the soil only in the first few days after the application. With time the bactericidal activity of these preparations dropped rapidly so that after one month the number of microorganisms returned to that of control level. Amiphos, rogor and anthio may be applied at doses of 2 g under the plant bushes to control hop aphids.'

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USSR

KOLESKO, S. B., and LUN'KIN, Yu. P., Leningrad Polytechnic Institute imeni
M. I. Kalinin

"The Laminary Boundary Layer in Calculating Oscillatory-Dissociation Relaxation of Gases and of Surfaces With Uneven Catalytic Properties"

Kiev, Gidromekhanika, No 20, 1972, pp 19-24

Abstract: During hypersonic motion of a body, sharp heating of the surrounding gas during passage through the main shock wave, and deceleration (braking) within the boundary layer both lead to excitation of oscillatory degrees of freedom and molecular dissociation, while at high temperatures durations of the processes become commensurable. In the general case of a multicomponent mixture, the simultaneous occurrence of oscillatory and dissociation relaxation should be considered in the study of nonequilibrium processes.

The authors had earlier (1967) obtained a closed system of equations describing the motion of a multicomponent mixture of viscous heat-conducting gases with simultaneous appearance of oscillatory and dissociation relaxation. In the present study, equations of the laminary boundary layer are derived from general equations by the usual method; and for a diatomic gas in the absence
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USSR

KOLESHKO, S. B. and LUN'KIN, Yu. P., Gidromekhanika, No 20, 1972, pp 19-24

of mass forces and thermal diffusion, an initial system of equations for plane steady motion is formulated. Formulas for various contributory factors are derived, and illustrated graphically.

It is concluded that the distribution of oscillatory temperature in the boundary layer is of complex character, this being explained as the effect of dissociation on relaxation of oscillatory degrees of freedom; also, that oscillatory relaxation leads to retardation of dissociation relaxation. Despite the fact that with oscillatory-dissociation relaxation temperature is higher than in the case of dissociation relaxation alone, specific dissociation velocities in the authors' study remained smaller.

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USSR

UTC 532.517.2

KOLESUKO, S. B., LUNKIN, YU. P.,

"Laminar Boundary Layer in a Plate with Arbitrary Catalytic Properties
in the Presence of Oscillatory-Dissociation Relaxation of a Gas"

Trudy Leningradskogo Politekhnikheskogo Instituta, Aerotermodinamika
(Works of the Leningrad Polytechnical Institute Aerothermodynamics),
No 313, 1970, pp 5-12

Translation: This article contains a study of the laminar boundary layer
in a plate with arbitrary catalytic properties in the presence of oscillatory-dissociation relaxation of a gas.

The semiphenomenological derivation of the boundary conditions
for concentrations and mean oscillatory energies of the components of the
mixture is presented. The finite-difference method was used to obtain
the solution of the boundary layer equations with corresponding boundary
conditions in a diatomic gas. The effect of catalytic surface activity
with respect to oscillatory relaxation has been investigated in detail.
Data are presented on the distribution of the progressive and oscillatory
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USSR

KOLESHKO, S. B., et al., Trudy Leningradskogo Politeknicheskogo Instituta, Aerotermodinamika (Works of the Leningrad Polytechnical Institute Aerothermodynamics), No 313, 1970, pp 5-12.

atomic temperatures and concentrations in the boundary layer. There are 4 illustrations and a 6-entry bibliography.

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USSR

UDC: 548.25

BUYKO, L. D., KALOSHKIN, E. P., KOLESHKO, V. M., and CHIGIR',
G. G.

"Device for Measuring the Alloying Profile of Epitaxial Films"

Moscow, Pribory i tekhnika eksperimenta, No 4, July-August, 1972,
pp 220-222

Abstract: The function of the device described by this paper is to determine the concentration of impurities in epitaxial films through the use of the barrier capacitance method, which is based on the dependence of the p-n junction capacitance on the impurity concentration. The basic schematic of the device is given. Its principal component is a bridge with transformer arms and a set of standard capacitances. Capabilities of the device were checked by using epitaxial films of the n^+-n and n^+-n-p^+ types, grown on Si of the substrate KES-0.01 by the reduction of $SiCl_4$ with hydrogen. A curve is plotted for the distribution of the impurity concentration in the n^+-n film as a function of the film's thickness, and it is found that points found experimentally through the use of this device fall almost directly on this theoretically plotted curve. Similar graphical results were obtained for the n^+-n-p^+ film.

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USSR

UDC 621.382.2

KOLESKO, V.M., BOLDYREV, V.P.

"Effect Of Gold-Silicon Ohmic Contact On Electrophysical Parameters of Semiconductor Devices"

V sb. Vopr. prochnosti i plastichn. met. (Problems Of Stability And Plasticity Of Metals--Collection Of Works), Minsk, Nauka i tekhn., 1970, pp 125-127 (from RZh--Elektronika i yeye primeneniye, No 1, January 1971, Abstract No 1B114)

Translation: The paper reports on the effect of an Au-Si ohmic contact on the forward potential drop of p-n junctions formed in silicon planar-epitaxial structures. Creation of a Au-Si eutectic was used for a reliable ohmic contact. It is shown that by a change of the structure and technological processing of the eutectic layer it is possible to decrease the contact resistance substantially. V.K.

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USSR

UDC 621.333.001.5

SKVORTSOV, A. A., Candidate of Technical Sciences, KABENIN, E. G., Candidate of Technical Sciences, KOLESIKA, A. M., Engineer, AKUMTS, R. A., Candidate of Technical Sciences, CHERNYAVSKIY, Z. M., Engineer

"Failure Rate of the Collectors of Traction Motors with a Plastic Case in Operation"

Moscow, Elektrotehnika, No 8, 1971, pp 21-22

Abstract: A study was made of the nature of operating failures of electric traction motors with a plastic case and causes for other occurrence. A sample of 16 collectors from motors which had been turned in for plant repair was used for the study. The largest number of failures occur at the overlap of the collector plates on the winding side. Problems with the armature rings were also very common. The nature of the damage was studied on collectors from 81,000 to 750,000 km of use. No correlation was discovered between the amount of use and the type of failure.

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KOLESNICHENKO, A. F.

THE THERMODYNAMIC ACCELERATION OF CONDICTING MEDIA IN PISTON GAS-LIQUID FILMS

Abstract of a Paper by K. I. KIN, G. E. KUZNETSOV, A. F. KOLESNICHENKO, V. V. KOLYUBIN Given at the International Thermodynamic Conference, pp 166-167

SPRS 60634
27 November 1973

(1)

1. The study of the processes of energy exchange in piston gas-liquid films is a new and highly complicated problem. The estimates of the efficiency of transmitting energy to a liquid-metal piston. The estimates of the efficiency increment of the kinetic energy of the piston (the ratio of the ratio of the film) can reach the limiting values on the order of 0.75 to 0.85.

The primary cause of the reduction in efficiency turns out to be disturbance of the boundaries of the liquid-metal piston. Accordingly, the methods of stabilizing the piston boundaries are acquiring urgency.

The results of experimental studies of the acceleration of a single liquid-metal piston in channels of constant and variable cross section are discussed in this paper. A study was made of the effect of the characteristic magnetic field on the intensity of the deterioration of the piston.

The accelerated motion of the piston in the channel under the effect of a pressure drop on its ends is accompanied by intense deterioration of the part of the piston which is caused by the introduction of a gas cavern into the liquid. Experimental data were obtained on the rate of introduction of the piston without stabilization. These data are investigated as the initial data for analysis of the methods of stabilizing liquid pistons in piston flows.

The energy characteristics of the acceleration process in channels of constant and variable cross section were obtained with and without stabilization of the piston boundaries. The essence of the applied stabilization technique is that a current is passed through the meridional cross section of the piston as a result of which volumetric electromagnetic forces appear which concentrate the metal along the direction of the current (Figure 1). In the tested channel, the field was induced near the ends of the piston using ferromagnetic inserts between the current conducting walls. The efficiency of the piston acceleration when realizing such a stabilization procedure in a channel

1/2 - 023
UNCLASSIFIED
TITLE--MODIFIED CAST IRON FOR THIN SECTION CHILL CASTINGS -U- PROCESSING DATE--13NOV70
AUTHOR--(02)-KOLESNICHENKO, A.G., BUYKO, G.G. K
COUNTRY OF INFO--USSR
SOURCE--LITEINOE PROIZV., MAR. 1970, (3), 31
DATE PUBLISHED----MAR70
SUBJECT AREAS--MATERIALS
TOPIC TAGS--CAST IRON, CRYSTAL LATTICE STRUCTURE, REFRACTORY MATERIAL,
INDUCTION FURNACE, SURFACE PROPERTY/(U)SCH1532 CAST IRON
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--3004/1924 STEP NO--UR/0128/70/000/003/0031/0031
CIRC ACCESSION NO--AP0132186
UNCLASSIFIED

2/2 023

UNCLASSIFIED

PROCESSING DATE--13NOV70

CIRC ACCESSION NO--AP0132186

ABSTRACT/EXTRACT--(U) GP-0-

ABSTRACT.

COMPARATIVE DATA ARE REPORTED FOR CASTINGS (MAX. DIMENSION 20 MM, PRODUCED IN PARALLEL SERIES OF TESTS WITH AND WITHOUT MODIFICATION WITH SI75 0.5-1.0PERCENT, AND OR KASII AND AL) FROM SCH 15-32 CAST IRON, CONTG. C 3.0-3.2, SI 2.0-2.2, MN 0.7-0.9, P 0.09-0.12, S 0.04-0.06PERCENT. AFTER MELTING IN AN INDUCTION FURNACE, THE IRON WAS TAPPED INTO A 1 TON LADLE AT 1400 DEGREEESC AND POURED AT 11280-1300 DEGREEESC INTO FOUR COMPARTMENT CHILLS PRE HEATED TO 200-250 DEGREEESC AND COATED WITH REFRACTORY. WHEREAS THE UNMODIFIED CASTINGS EXHIBITED HARD SPOTS TO A DEPTH OF 6-7 MM, THE ALPHA IRON LATTICE PARAMETER OF THE SURFACE LAYERS OF THE MODIFIED CASTINGS DECREASED ON PROGRESSIVE INCREASE IN THE SI CONTENT TO APPROX. 10PERCENT (WITH SI75 PLUS AL).

UNCLASSIFIED

USSR

UDC 633.15+581.2

OSADCHIY, A. P., SHEVCHENKO, I. S., and KOLESNICHENKO, G. S., Vol. . .
gograd Agricultural Institute

"Nature of the Transformation of Corn Leaf Impedance as Affected
by Smut"

Moscow, Vestnik Sel'skokhozyaystvennoy Nauki, No 1, 1970, pp 114-116

Abstract: A study was conducted of the changes in the passive electrical properties of corn plant tissues affected by smut (*Ustilago zeae*). Experimental results indicate that the introduction of a heterotroph together with its system of physiologically active substances changes the normal course of life processes in the host plant, and disrupts its natural coordination and harmonious metabolic processes, the transformation of which is associated with electrical phenomena occurring in plants.

A definite relationship was established between the kinetics of the course of the disease and change in the electrophysiological parameters of the inner tissues, associated with a number of factors. The chemical composition and salt composition of the mycelium differ
1/3

USSR

OSADCHIY, A. P., et al., Moscow, Vestnik Sel'skokhozyaystvennoy Nauki, No 1, 1970, pp 114-116

from these indices in the host plant. Enlargement of the mycelium and its intercellular substances produces a change in the ionic composition of the measured substrate and its conductor properties. The mycelium of *Ustilago zeae* developing in plant tissues not only fills a series of places but often penetrates into host tissue cells, disturbing tonoplast completeness and affecting the electrical conductivity of the tissues.

Investigation of this disease also indicated a disturbance of hormone metabolism and the accumulation of large amounts of the beta-indolylacetic acid associated with it. Activity of this acid causes the formation of blisters which cannot help but change the impedance characteristics. Antibiotic substances, formed in plant tissues in response to the smut, change the ionic composition of the diseased sector and influence the passive electrical properties of the plant. Hyperplasia and hypertrophy of the smut-affected plant tissues, which ensure existence of the parasite because of the increased

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USSR

OSADCHIY, A. P., et al., Moscow, Vestnik Sel'skokhozyaystvennoy
Nauki, No 1, Jan 70, pp 114-116

inflow of nutrients from plant to pathogen, change the electrical
characteristics of the host plant.

3/3

1/2 045 UNCLASSIFIED PROCESSING DATE--16OCT70
TITLE--INTERACTION OF MAGNETOHYDRODYNAMIC WAVES IN A BOUNDED PLASMA -U-

AUTHOR--(03)--KARPLIUK, K.S., KOLESNICHENKO, I.I., DRAEVSKIY, V.N.

COUNTRY OF INFO--USSR

SOURCE--NUCLEAR FUSION, VOL. 10, MAR. 1970, P. 3-11

DATE PUBLISHED-----70

SUBJECT AREAS--PHYSICS

TOPIC TAGS--MAGNETOHYDRODYNAMIC WAVE, WAVE EQUATION, PLASMA INSTABILITY,
STRONG MAGNETIC FIELD, SURFACE WAVE, ACOUSTIC WAVE, PLASMA INTERACTION

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRA--1985/1749

STEP NO--AU/0000/70/010/000/0003/0011

CIRC ACCESSION NO--AP0101802

UNCLASSIFIED

2/2 045

UNCLASSIFIED

PROCESSING DATE--16OCT70

CIRC ACCESSION NO--AP0101802

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. A DESCRIPTION IS GIVEN OF A GENERAL METHOD OF DERIVING DYNAMIC EQUATIONS FOR THE AMPLITUDES OF INTERACTING WAVES (BOTH VOLUME AND SURFACE WAVES) IN A BOUNDED PLASMA. THE TREATMENT IS BASED ON THE STUDY OF THE INTERACTION OF MAGNETOHYDRODYNAMIC WAVES IN A PLASMA CYLINDER CONFINED BY A STRONG MAGNETIC FIELD. DECAY INSTABILITIES WERE STUDIED IN ORDER TO FIND THE PROBABILITIES AND EVALUATE THE CHARACTERISTIC TIMES OF THE CORRESPONDING THREE PLASMON PROCESSES. IT IS SHOWN THAT THE NONLINEARITY OF THE BOUNDARY CONDITIONS CAN HAVE A SUBSTANTIAL EFFECT ON THREE PLASMON INTERACTIONS INVOLVING SURFACE WAVES. THE LINEAR PROBLEM WAS SOLVED IN ADVANCE. IT IS SHOWN, IN PARTICULAR, THAT IN ADDITION TO THE ALFVEN SURFACE WAVES, ACOUSTIC TYPE SURFACE WAVES WITH FREQUENCIES APPROXIMATELY EQUAL CAN PROPAGATE IN THE PLASMA CYLINDER.
FACILITY: AKADEMIIA NAUK UKRAINSKOI SSR, INSTITUT FIZIKI, KIEV, UKRAINIAN SSR.

UNCLASSIFIED

USSR

UDC[537.226+537.311.33]:[537+535]

SINYAKOV, YE. V., and KOLESNICHENKO, K. A.

"Semiconductor Properties of WO_3 -Doped Solid Solutions of $Ba(TiSn)O_3$ "

V sb. Segnetoelektriki i okisnyye poluprovodniki (Ferroelectrics and Oxide Semiconductors -- Collection of Works), Dnepropetrovsk, 1971, pp 69-74 (from RZh-Fizika, No 1, Jan 72, Abstract No 1YE1309 by YE. A.)

Translation: A study was made of the electrical properties of $Ba(TiSn)O_3$ solid solutions as a function of the concentration of WO_3 addition. Investigations were made in the $BaSnO_3$ concentration range of 0.5 to 16 mol. %. WO_3 was introduced over and above stoichiometry in the amount of 0.04-0.3 mol. %. The specimen preparation method is described. Variation of resistance (R) with temperature was measured by the d-c two-probe method in the 20-300°C temperature range. The field applied to a specimen did not exceed 10 v/cm. Permittivity (ϵ) was measured on a frequency of 1 kHz. From the sign of thermoelectromotive force it was established that all the crystals obtained possess electronic conductivity. Specimens containing 0.04-0.14 mol. % WO_3 possessed properties characteristic of semiconducting $BaTiO_3$. Specimens containing more than 0.17 mol. % WO_3 possessed high R and exhibited no positive temperature resistance coefficient in the phase-transition region. Strong dependence of ϵ .

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USSR

SINYAKOV, YE. V. and KOLESNICHENKO, K. A., Segnetoelektriki i oksidnyye poluprovodniki, 1971, pp 69-74

on electrode material due to the formation of pre-electrode layers with great R was found. Superlinear current-voltage characteristics were observed in the region of fields of 200 v/cm.

2/2

USSR

UDC [537.226+537.311.33]:[537+535]

KOLESNICHENKO, K. A.

"Effect of Cooling Conditions on Electrical Properties of $(\text{BaLa})\text{TiO}_3$ and $(\text{BaPr})\text{TiO}_3$ Solid Solutions"

V sb. Segnetoelektriki i okisnyye poluprovodniki (Ferroelectrics and Oxide Semiconductors -- Collection of Works), Dnepropetrovsk, 1971, pp 50-57 (from RZh-Fizika, No 1, Jan 72, Abstract No 1YE1312 by YE. DUDNIK)

Translation: The author studied the effect of the cooling rate (slow cooling and hardening) on electrical conductivity and static magnetic susceptibility (χ) of polycrystalline specimens of two systems of solid solutions of $(\text{BaLa})\text{TiO}_3$ and $(\text{BaPr})\text{TiO}_3$. Specimens were made according to the usual technology. After isothermal holding, some of the specimens underwent hardening (rapid cooling for 30 minutes from synthesis temperature to 100°C); the rest were cooled in the furnace to 800°C for an hour and then together with the furnace [sic]. It is shown that for specimens with low impurity concentration hardening results in a certain decline of resistance in the tetragonal phase and in practically complete disappearance of the effect of a positive temperature resistance

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USSR

KOLESNICHENKO, K. A., Segnetoelektriki i oksidnyye poluprovodniki, 1971,
pp 50-57

coefficient, while with a greater impurity concentration, specimen resistance as a result of hardening declines by 8-10 orders of magnitude. χ values for slowly cooled and hardened specimens are practically indistinguishable. A qualitative explanation is presented for the results obtained.

2/2

USSR

UDC 531.44.669.35

BELOBORODOV, I. I., KOLESNICHENKO, L. F., NENAKHOV, A. V., and YUGA, A. I.,
Institute of Problems of the Material Science of the Academy of Sciences
UkrSSR

"Investigation of Antifriction Properties of Bronze-Base Materials"

Kiev, Poroshkovaya Metallurgiya, No 11(131), Nov 73, pp 91-93

Abstract: The technology of the production of bronze-base metalloplastic antifriction materials with a high content of solid lubricant is described. The antifriction properties were studied on specimens with a highly porous (50%) bronze shell, produced from Cu (90%) and Sn(10%) powders and impregnated with a mix of fluoroplast-4 with 30% graphite. The results of investigations carried out in air at a sliding rate of 6 m/sec and loads of up to 60 kg/cm² show that materials with 50% porosity based on non-spherical powders possess a high fatigue life independent of the presence of a solid lubricant surface layer. The antifriction properties of materials with 30% porosity based on spherical powders do not deteriorate when the surface layer is eliminated. Metalloplastic materials based on non-spherical powders with a higher content of solid lubricant are recommended for working under conditions of friction without lubrication. Four figures, one table, five bibliographic references.

1/1

USSR

UDC: 621.762:669.018.95

NAZARENKO, N. D., YUGA, A. I., VLASKO, N. I., TRESVYATSKIY, S. G.,
KOLESNICHENKO, L. F., Institute of Problems of Material Sciences, Academy of
Sciences UkrSSR

"Influence of Metal Fillers on Friction Properties of Sital 3"

Kiev, Poroshkovaya Metallurgiya, No 7, Jul 73, pp 51-54.

Abstract: An earlier work showed that the material called Sital 3, consisting of the oxides SiO_2 , Al_2O_3 , TiO_2 , B_2O_3 , MgO and fluorides, can be used for the manufacture of parts for friction couples. The authors believe that introduction of metal fillers, causing intensive heat transfer from the contact zone into the depth of the material and formation of separating films on the surface of the material, could significantly improve the efficiency of Sital 3. Studies were performed in which from 10 to 90 wt. % metal powder was introduced to the material. The curve of coefficient of friction as a function of percent content of copper filler shows a minimum at 30-40%. The introduction of about 30% copper powder allows the material to be used for vacuum operation, which is impossible with pure Sital.

Composite Materials

UDC 542.65:532.526.7

USSR

KOLESNICHENKO, L. F., POPCHENKO, YU. A., KLIMENKO, A. V., and
ZABOLOTNYY, L. V., Institute of Problems of Material Science,
Academy of Sciences Ukrainian SSR

"Use of Composite Materials in Mobile Joints"

Kiev, Poroshkavaya Metallurgiya, No. 9, Sep 70, pp 27-33

Abstract: Modern concepts of friction and wear are based on phenomena caused by the initiation and advancement of plastic processes in the contact zone and their interrelation with the effects of the operating medium. Space technology applications have made necessary extensive studies in overcoming the low effects of certain lubricants in vacuum. The creation of a composite surface by dispersing particles of a stable phase in a plastic matrix designed to preclude plastic flow and failure through friction, is an important step in overcoming the low efficiency of some

USSR

KOLESNICHENKO, L. F., et al, Poroshkovaya Metallurgiya, No. 9, Sep 70,
pp 27-33

materials under specific conditions. Most promising, however, are combination materials which, unlike composite materials, are characterized by a macroscopic combined structure; they comprise two large groups: matrix-type combination materials and laminated systems of combination materials consisting of individual layers or layered components. To facilitate selection of components for combination materials of special designation, experimental data on antifriction properties and wear resistance for individual materials both in air and in vacuum are cited in a table. Applying a coat of any material cited in this table to the working surface of a steel specimen will change the friction parameters. The shortcoming of such modifications in the surface layer is the short-term work capacity of the friction joint under conditions featuring antifriction. Figures in the original article show the effect of layer orientation on the coefficient of friction and wear due to changes in pressure.

Transformation and Structure

USSR

UDC 542.65:532.526.7

K
KOLESNICHENKO, L. F., and POLOTAY, V. U., Institute for Problems of Material Science, Academy of Sciences UkrSSR

"Directional Crystallization of Alloys as a Method for Obtaining Structures With High Resistance to Wear"

Kiev, Poroshkovaya Metallurgiya, No 7, Jul 70, pp 62-67

Abstract: The most widely accepted methods of raising the wear resistance of materials are based on the use on various kinds of thermochemical treatment involving the possibility of thermal diffusion saturation of the surface with one or more elements or coating the surface with other metals. The wear resistance of materials subjected to such thermochemical treatment increases several times and makes the materials suitable for service in moving precision joints where the load is uniformly distributed and maximum coupling geometry is imperative. The logical outcome of earlier research is the need of a surface modification technology which would provide the presence of a structure with individual crystals packed in a certain direction with respect to the working surface. The method of thermochemical treatment proposed here involves heating the coated surface to fusion temperature and cooling it with directional

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USSR

KOLESNICHENKO, L. F., and POLOTAY, V. U., Poroshkovaya Metallurgiya, No 7,
Jul 70, pp 62-67

heat dissipation, producing in the surface layer self-ordered fibrous structures which raise resistance to wear. The effect of the shape and orientation of the structure on the wear resistance of the modified material was studied on specimens with globular inclusions of borides, filamentary boride crystals arranged in perpendicular to the friction surface. The specimens were subjected to low-temperature treatment and friction machine testing at dry contact in air at a rate of 1 m/sec and at variable pressure. The wear resistance in these specimens was found to be higher than in materials with globular boride inclusions and filamentary boride crystals arranged in parallel to the friction surface.

2/2

- 74 -

Acc. Nr:

AP0039711

Abstracting Service:

CHEMICAL ABST.

Ref. Code:

UR0506

K

76873u Effect of urethane and N-hydroxyurethane on organ cultures of mouse embryonic pulmonary tissue. Kolesnichenko, T. S. (Inst. Eksp. Klin. Onkol., Moscow, USSR). ~~Pop. Onkol.~~ 1970, 16(1), 112-13 (Russ). N-Hydroxyurethane or urethane at 0.5, 1.0, or 2.0 mg/ml caused differing degrees of dystrophic changes in mouse embryo lung tissue explants, but not all cultures developed adenoma or preadenomatous changes. The results are not conclusive that N-hydroxyurethane is the proximal urethane metabolite responsible for the latter's blastomogenic action.

BJJR

LD

02

REEL/FRAME
19740994

UDC 533.9

USSR

KARPLYUK, K. S., KOLESNICHENKO, Ya. I., Institute of Physics, Academy of Sciences,
Ukrainian SSR, Kiev

"The Interaction of Waves in Plasma Wave Guides. II"

Kiev, Ukrainskiy Fizicheskii Zhurnal, No 9, September 1970, pp 1468-1476

Abstract: The nonlinear interaction of waves in magnetized plasma wave guides is investigated. Matrix elements describing the interaction of slow high-frequency waves are calculated. Some decay instabilities in a magnetized plasma wave guide are considered. 1 table. 2 bibliographic entries.

1/1

USSR

UDC 533.9

KARPLYUK, K. S., KOLESNICHENKO, Ya. I., Institute of Physics, Academy of Sciences, Ukrainian SSR, Kiev

"The Interaction of Waves in Plasma Wave Guides. I"

Kiev, Ukrainskiy Fizicheskiy Zhurnal, No 9, September 1970, pp 1459-1467

Abstract: The interaction of waves is considered in a bounded plasma described by equations of two-component hydrodynamics with the finiteness of the plasma temperature taken into account. It is shown that with a corresponding determination of the scalar product, the normal modes of the plasma wave guide form an orthogonal system. This permits effective calculation of the matrix elements which describe the processes of wave interaction in the plasma wave guide. Account is taken of the influence of nonlinearity of the boundary conditions upon wave interaction. Consideration is given to a number of specific interactions with the participation both of solid waves in the case in which a constant magnetic field is absent. 10 bibliographic entries.

1/1

1/2 030. UNCLASSIFIED PROCESSING DATE--18SEP70
TITLE--SLOW, HIGH FREQUENCY WAVES IN A MAGNETIZED PLASMA WAVEGUIDE -U-
AUTHOR--(02)-KARPLYUK, K.S., KOLESNICHENKO, YA.I. K
COUNTRY OF INFO--USSR
SOURCE--ZHURNAL TEKHNIЧЕСКОИ ФИЗИКИ, VOL. 40, JAN. 1970, P. 54-61
DATE PUBLISHED----JAN70
SUBJECT AREAS--PHYSICS
TOPIC TAGS--WAVEGUIDE, PLASMA WAVE, PLASMA OSCILLATION, MAGNETIC FIELD
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--1979/1617 STEP NO--UR/0057/70/040/000/0054/0061
CIRC ACCESSION NO--AP0047939
UNCLASSIFIED

2/2 030

UNCLASSIFIED

PROCESSING DATE--18SEP70

CIRC ACCESSION NO--AP0047939

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. STUDY OF THE PROPAGATION OF SLOW, HF WAVES UNDER EFFECT OF A MAGNETIC FIELD IN CYLINDRICAL PLASMA WAVEGUIDE SURROUNDED BY A DIELECTRIC OR A METAL. DISPERSION EQUATIONS ARE OBTAINED WHICH DESCRIBE THE NATURAL OSCILLATIONS OF THE WAVEGUIDE FOR BOTH THESE CASES. AN ANALYSIS IS MADE OF THESE EQUATIONS AND DISPERSION CURVES ARE OBTAINED USING NUMERICAL CALCULATIONS. IT IS SHOWN THAT AN ALLOWANCE FOR TEMPERATURE RESULTS IN THE ARISING OF NEW OSCILLATION BRANCHES IN THE BOUNDED PLASMA SYSTEMS.

USSR

UDC 621.372.061

SIGORSKIY, V. P., Doctor of Technical Sciences, PETRENKO, A. I., Doctor of Technical Sciences, DENBNOVETSKIY, S. V., Candidate of Technical Sciences, TSURIN, O. F., Candidate of Technical Sciences, KOLESNIK, A. A.

"Experimental System for Operator-BESM-3M Computer Interaction"

Kiev, Mekhanizatsiya i Avtomatizatsiya Upravleniya, No 1, Jan/Feb 72, pp 24-26

Abstract: A brief description of an experimental model for a system for the graphical interaction between an operator and the BESM-3M computer is given. The model was developed at Kiev Polytechnical Institute and is currently being tested at the Scientific Research Institute of Automated Systems for Planning and Control in Construction (Kiev). The designation and characteristics of units in the experimental model are described, including a block diagram of the system and a diagram of the structure of words used in constructing graphical information. The controlling word switches on individual units of the machine such as the light pencil and the rotation unit. The control word can also give an image recorded in the memory of the machine to which a 21-32 bit word corresponds and can also organize a ring structure for the construction of complex images.
1/2

USSR

SIGORSKIY, V. P., et al., Mekhanizatsiya i Avtomatizatsiya Upravleniya,
No 1, Jan/Feb 72, pp 24-26

If the image is recorded by a method invariant to the position on the screen of the indicator device in the data bank to which the transfer in processing the controlling word is made, multiplication of a given image without additional losses is possible and the given structural data bank can be represented as a symbol in the character generator. An image is regenerated by periodic interrogation of the magnetic memory of the BESM-3M with a frequency of 33 Hz. The raw data for images is stored in 1000 locations of the working storage. Digital portions of the operation are carried out on logical elements of the MIR-1 complex.

2/2

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USSR

UDC 547.26'118

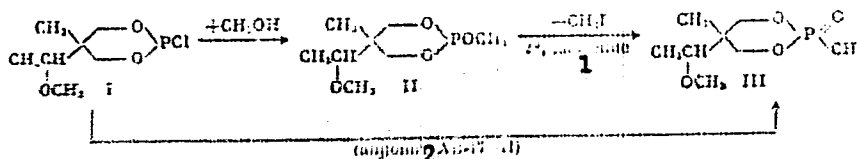
BOGATSKIY, A. V., BUTOVA, T. D., and KOLESNIK, A. A., Odessa State University
 imeni I. I. Mechnikov

"A New Arbuzov Rearrangement Variant"

Leningrad, Zhurnal Obshchey Khimii, Vol 41, No 8, Aug 71, p 1875'

Abstract: A previous article by the authors described the conversion of cyclic phosphite II to compound III as a result of an ordinary Arbuzov rearrangement (by the action of CH_3I and II with heating and under pressure)

The present article shows that compound III can be obtained directly from acid chloride I by the action of methanol in the presence of anion-exchanger AV-17-P in hydroxyl form. The reaction occurs at atmospheric pressure and at -5° , yield 70 percent.



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USSR

BOGATSKIY, A. V., et al., Zhurnal Obshchey Khimii, Vol 41, No 8, Aug 71,
p 1875

Key: 1. Pressure 2. (anion-exchanger AV-17-P)

Other type I acid halides react similarly. The study of the conversion
mechanism is continuing.

2/2

- 51 -

USSR

UDC 547.87+547.26'118

BUTOVA, T. D., KOLESNIK, A. A., and BOGATSKIY, A. V., Odessa State University imeni I. I. Mechnikov

"Alkoxy Compounds. Part 44. Synthesis of Some Alkoxyalkyl-Substituted 2-Oxo-1,3,2-dioxaphosphorinane Amides"

Leningrad, Zhurnal Obshchey Khimii, Sep 71, Vol 41, No 9, pp 2009-2011

Abstract: This study was prompted by interest in the chemistry of substituted phosphoric acid amides and by the nearly complete lack of information on cyclic compounds of this type. This is the first report on the synthesis of 2-amino-2-oxo-5-alkyl-5-methoxyalkyl-1,3,2-dioxaphosphorinanes by the reaction of 2-chloro-2-oxo-5-alkyl-5-methoxyalkyl-1,3,2-dioxaphosphorinanes (alkyl radicals: methyl, ethyl and isopropyl) with diethylamine, dimethylamine, morpholine and ethylenimine. The obtained compounds are extremely unstable and readily decompose on distillation under vacuum. Their structures are supported by IR spectra showing absorption bands at 1239 cm^{-1} characteristic of the P=O bond and at 810 cm^{-1} typical of the P-N bond. The properties of the new compounds are given in tables.

1/1

1/2 014 UNCLASSIFIED PROCESSING DATE--2300170
TITLE--PROLONGED STORAGE OF PEARS IN FILMS -U-
AUTHOR--(02)-PONOMAREYA, P.F., KOLESNIK, A.A. K
COUNTRY OF INFO--USSR
SOURCE--IZV. VYSSH. UCHEB. ZAVED., PISHCH. TEKHNOL. 1970, (1), 18-20
DATE PUBLISHED-----70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES
TOPIC TAGS--FOOD STORAGE, ENZYME ACTIVITY, POLYETHYLENE, FOOD CONTAINER

CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--1997/1090 STEP NO--UR/0322/70/000/001/0018/0020
CIRC ACCESSION NO--AT0119949
UNCLASSIFIED

2/2 014

UNCLASSIFIED

PROCESSING DATE--23OCT70

CIRC ACCESSION NO--AT0119949

ABSTRACT/EXTRACT--(U) GP-0-- ABSTRACT. PEARS WERE STORED IN POLYETHYLENE (I) BAGS, CONTG. 1-1.5 KG PEARS, FOR SIMILAR TO 6 MONTHS. THE STORAGE IN I SLOWS DOWN THE RIPENING, DECREASES THE ACTIVITY OF PECTOLYTIC ENZYMES, IMPROVES THE STABILITY OF PECTINS, AND DECREASES THE DEGRADATION OF PROTOPECTINS TO SOL. SUGARS. THE GAS RETAINED BY THE PEARS BECOMES LOW IN O AND ENRICHED IN CO SUB2. THE CONCNS. OF ACH AND ETOH IN PEARS STORED IN I WERE LOWER THAN IN A CONTROL BATCH STORED IN THE AIR. THE STORAGE OF 1 TON PEARS REQUIRES 3.5 KG I. FACILITY: IZV. VYSSH. UCHEB. ZAVED., PISHCH. TEKHNOL. 1970, (1), 18-20.

UNCLASSIFIED

1/2 024 UNCLASSIFIED PROCESSING DATE--23OCT70
TITLE--THE EFFECT OF FLUORINE ON METABOLIC PROCESSES IN CALCIFIED TISSUES
IN RATS KEPT ON A CARIOGENIC DIET -U-
AUTHOR--KOLESNIK, A.G.
COUNTRY OF INFO--USSR K
SOURCE--STOMATOLOGIYA, 1970, VOL 49, NR 3, PP 21-24
DATE PUBLISHED-----70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES
TOPIC TAGS--DENTAL CARIES, CARBON ISOTOPE, CALCIUM ISOTOPE, PHOSPHORUS
ISOTOPE, CHEMICAL LABELLING, PROTEIN METABOLISM

CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--1998/0098 STEP NO--UR/0511/70/049/003/0021/0024
CIRC ACCESSION NO--AP0120798
UNCLASSIFIED

subsequent treatment were determined. The pores were corrected for the purpose of obtaining maximum sensitivity during the investigation of alloy microporosity. It was shown that with selected optical conditions local pores with dimensions $10 \times 15 \times 25 \mu$ can be reliably detected. The problems of the appearance of external surface sensitivity of the alloy in pores and microvoids were considered. Assumptions

114 029

UNCLASSIFIED

PRIME 54746 DATE: 2001/06

272 024
CIRC ACCESSION SB--AP0120198

SOURCE ACCESSION NO--A061079
ABSTRACT/EXTRACT--(U) GP-9- Abstract. IN EXPERIMENTS ON THE DISTURBANCE OF METABOLISM OF CALCIUM AND PHOSPHORUS BY FLUORINE PREPARATIONS, IT WAS SHOWN THAT THE AUTHOR STUDIED THE INFLUENCE OF FLUORINE AND CARCINOGENIC DIET ON THE INCORPORATION OF CA PRIMERS AND P PRIMERS INTO THE BONE TISSUE, AS WELL AS LYSINE C PRIMERS, METHIONINE C PRIMERS AND P PRIMERS INTO THE PROTEIN FRACTION OF CALCIFIED TISSUES OF THE BONES AND TESTES. SIGNIFICANTLY REDUCED INFLUENCES SOME INDICES OF THE PROTEIN AND MINERAL METABOLISM, DISTURBED IN ANIMALS KEPT ON A CARCINOGENIC DIET UNDERLINED THE METABOLISM OF LYSINE, METHIONINE IN PROTEIN FRACTIONS, CALCIUM AND PHOSPHORUS IN MINERAL FRACTION OF TESTES. MARKED CHANGES OF METABOLIC INDICES OCCUR AT LATER PERIODS OF THE EXPERIMENT (20-30 DAYS), THIS INDICATING THE NECESSITY OF PROLONGED USE OF FLUORINE PREPARATIONS.

INDICATING THE NECESSITY OF PROLONGED USE OF FLOUTING PREPARATIONS.
FACILITY: LABORATORIYA PATOLOGICHESKOY FIZIOLOGII ISENKAL'NODU N-1
INSTITUTA STOMATOLOGII AMN, MOSCOW.

UNCLASSIFIED

USSR

SIGORSKIY, V. P., et al., Mekhanizatsiya i Avtomatizatsiya Upravleniya,
No 1, Jan/Feb 72, pp 24-26

If the image is recorded by a method invariant to the position on the screen of the indicator device in the data bank to which the transfer in processing the controlling word is made, multiplication of a given image without additional losses is possible and the given structural data bank can be represented as a symbol in the character generator. An image is regenerated by periodic interrogation of the magnetic memory of the BESM-3M with a frequency of 33 Hz. The raw data for images is stored in 1000 locations of the working storage. Digital portions of the operation are carried out on logical elements of the MIR-1 complex.

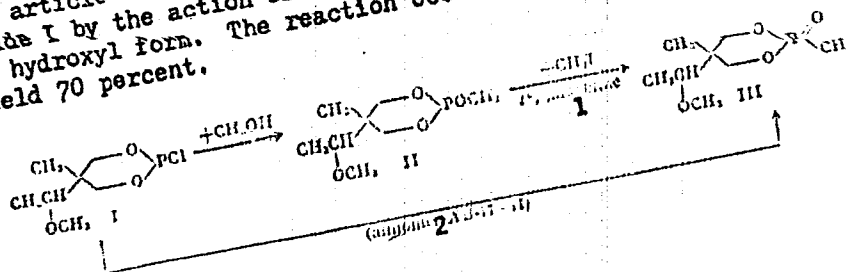
UDC 547.26.118

USSR

BOGATSKIY, A. V., BUFOVA, T. D., and KOLESNIK, A. A., Odessa State University
imeni I. I. Mechnikov

"A New Arbuzov Rearrangement Variant"
Leningrad, Zhurnal Obshchey Khimii, Vol 41, No 8, Aug 71, p 1875

Abstract: A previous article by the authors described the conversion of cyclic phosphite II to compound III as a result of an ordinary Arbuzov rearrangement (by the action of CH_3I and II with heating and under pressure). The present article shows that compound III can be obtained directly from acid chloride I by the action of methanol in the presence of anion-exchanger AV-17-P in hydroxyl form. The reaction occurs at atmospheric pressure and at -5° , yield 70 percent.



1/2

USSR

BOGATSKIY, A. V., et al., Zhurnal Obshchey Khimii, Vol 41, No 8, Aug 71,
p 1875

Key: 1. Pressure 2. (anion-exchanger AV-17-P)
Other type I acid halides react similarly. The study of the conversion
mechanism is continuing.

2/2

- 51 -

UDC 547.87+547.26'118

USSR

BUTOVA, T. D., KOLESNIK, A. A., and BOGATSKIY, A. V., Odessa State University imeni I. I. Mechnikov

"Alkoxy Compounds. Part 44. Synthesis of Some Alkoxyalkyl-Substituted 2-oxo-1,3,2-dioxaphosphorinane Amides"

Leningrad, Zhurnal Obshchey Khimii, Sep 71, Vol 41, No 9, pp 2009-2011

Abstract: This study was prompted by interest in the chemistry of substituted phosphoric acid amides and by the nearly complete lack of information on cyclic compounds of this type. This is the first report on the synthesis of 2-amino-2-oxo-5-alkyl-5-methoxyalkyl-1,3,2-dioxaphosphorinanes by the reaction of 2-chloro-2-oxo-5-alkyl-5-methoxyalkyl-1,3,2-dioxaphosphorinanes (alkyl radicals: methyl, ethyl and isopropyl) with diethylamine, dimethylamine, morpholine and ethylenimine. The obtained compounds are extremely unstable and readily decompose on distillation under vacuum. Their structures are supported by IR spectra showing absorption bands at 1239 cm^{-1} characteristic of the P=O bond and at 810 cm^{-1} typical of the P-N bond. The properties of the new compounds are given in tables.

1/1

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1/2 014 UNCLASSIFIED PROCESSING DATE- 2500170
TITLE--PROLONGED STORAGE OF PEARS IN FILMS -U-
AUTHOR-(02)-PONOMAREYA, P.F., KOLESNIK, A.A. K
COUNTRY OF INFO--USSR
SOURCE--IZV. VYSSH. UCHEB. ZAVED., PISHCH. TEKHNOL. 1970, (1), 18-20
DATE PUBLISHED-----70
SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES
TOPIC TAGS--FOOD STORAGE, ENZYME ACTIVITY, POLYETHYLENE, FOOD CONTAINER
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--1997/1090 STEP NO--UR/0322/70/000/001/0018/0020
CIRC ACCESSION NO--AT0119949
UNCLASSIFIED

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014

UNCLASSIFIED

PROCESSING DATE--23OCT70

CIRC ACCESSION NO--AT0119949

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. PEARS WERE STORED IN POLYETHYLENE (1) BAGS, CONTG. 1-1.5 KG PEARS, FOR SIMILAR TO 6 MONTHS. THE STORAGE IN I SLOWS DOWN THE RIPENING, DECREASES THE ACTIVITY OF PECTOLYTIC ENZYMES, IMPROVES THE STABILITY OF PECTINS, AND DECREASES THE DEGRADATION OF PROTOPECTINS TO SOL. SUGARS. THE GAS RETAINED BY THE PEARS BECOMES LOW IN O AND ENRICHED IN CO SUB2. THE CONCNS. OF ACH AND ETOH IN PEARS STORED IN I WERE LOWER THAN IN A CONTROL BATCH STORED IN THE AIR. THE STORAGE OF 1 TON PEARS REQUIRES 3.5 KG I. FACILITY: IZV. VYSSH. UCHEB. ZAVED., PISHCH. TEKHNOL. 1970, (1), 18-20.

UNCLASSIFIED

172 024 UNCLASSIFIED PROCESSING DATE--23OCT70
TITLE--THE EFFECT OF FLUORINE ON METABOLIC PROCESSES IN CALCIFIED TISSUES
IN RATS KEPT ON A CARIOGENIC DIET -U-
AUTHOR--KOLESNIK, A.G.

COUNTRY OF INFO--USSR

SOURCE--STOMATOLOGIYA, 1970, VOL 49, NR 3, PP 21-24

DATE PUBLISHED-----70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--DENTAL CARRIES, CARBON ISOTOPE, CALCIUM ISOTOPE, PHOSPHORUS
ISOTOPE, CHEMICAL LABELLING, PROTEIN METABOLISM

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAHE--1998/0098

STEP NO--UR/0511/70/049/003/0021/0024

CIRC ACCESSION NO--AP0120798

UNCLASSIFIED

PROCESSING DATE--230617

UNCLASSIFIED

2/2 024

CIRC ACCESSION NO--AP0120798
ABSTRACT/EXTRACT--(U) GP-0-

ABSTRACT. IN EXPERIMENTS ON 200 WISTAR RATS THE AUTHOR STUDIED THE INFLUENCE OF FLUORINE AND CARIOGENIC DIET ON THE INCORPORATION OF CA PRIME45 AND P PRIME32 INTO THE MINERAL, AS WELL AS LYSINE C PRIME14, METHIONINE C PRIME14 AND P PRIME32 INTO THE PROTEIN FRACTION OF CALCIFIED TISSUES OF THE BONES AND TEETH. FLUORINE FAVORABLY INFLUENCES SOME INDICES OF THE PROTEIN AND MINERAL METABOLISM, DISTURBED IN ANIMALS KEPT ON A CARIOGENIC DIET (NORMALIZES THE METABOLISM OF LYSINE, METHIONINE IN PROTEIN FRACTION, CALCIUM AND PHOSPHORUS IN MINERAL FRACTION OF TEETH). MARKED CHANGES OF METABOLIC INDICES OCCUR AT LATER PERIODS OF THE EXPERIMENT (IN 20-30 DAYS), THIS INDICATING THE NECESSITY OF PROLONGED USE OF FLUORINE PREPARATIONS.

FACILITY: LABORATORIYA PATOLOGICHESKOY FIZIOLOGII TSENTRAL'NOGO N-I INSTITUTA STOMATOLOGII AMN, MOSCOW.

UNCLASSIFIED

Powder Metallurgy

UDC 621.762.007. -

USSR

PALATNIK, L. S., KAGAN, YA. I., SHILOV, I. F., BELIAYEV, YU. I., BOGDANOVA, A. F., KOBYLEV, P. P., KOLESNIK, B. I., and KUDAKOV, D. D., Khar'kov Polytechnic Institute imeni V. I. Lenin

"On the Micro- and Macroheterogeneity of the SAS-1 Alloy"

Kiev, Poroshkovaya Metallurgiya, No 4, Apr 73, pp 22-28

Abstract: A study was made of the physical and chemical heterogeneity of the SAS-1 aluminum sintered alloy. The luminescence method of flaw detection using metallography was employed in the investigation of the physical heterogeneity of the alloy. The nature, dimensions and statistical distribution of pores appearing in the alloy in the process of its production and subsequent treatment were determined. The parameters of the luminescence method were corrected for the purpose of obtaining maximum sensitivity during the investigation of alloy microporosity. It was shown that with selected optimal conditions local pores with dimensions $10 \times 15 \times 25 \mu m$ can be reliably detected. The problems of the appearance of chemical heterogeneity of the alloy in micro- and macrovolumes were considered. Assumptions are advanced whose realization will result in a decreased number of macro- and micro-flaws in the SAS-1 alloy.

UDC 612.11/.12:621.3.029.6

USSR

KOLESNIK, F. A., Professor, Colonel of the Medical Service, KOMOGORTSEVA, N. A.

"Variation of the Number of General Sulfhydryl Groups in the Blood of People in Contact With Microwave Generators"

Moscow, Voenno-Meditsinskiy Zhurnal, No 3, 1973, pp 63-64

Abstract: A study was made of the sulfhydryl groups in the blood by the method of Kolthoff and Harris amperometric titration in the V. V. Sokolovskiy (1961) version. The basis for it was the principle of titrating the investigated hemolysate with a 0.001 M solution of silver nitrate. The silver ions formed during the chemical reaction are bound to the sulfhydryl groups as follows: $R-SH + Ag \rightarrow R-S-Ag + H^+$. The amount of silver expended on the titration is equivalent to the SH-group content. An experimental group (having contact with microwave generators) and a control group were examined. The ages of the examinees varied from 20 to 40 years, and the time spent working with the generators was from 1 to 10 years. Upon examination, an asthenic state with neurocirculatory dystonia of the hypotensive type, hyperension in the first stage with the asthenic state and other somatic diseases (gastritis, cholecystitis and polyarthrititis) were found in the experimental group. People working with microwave generators were found to have a reduced content of total sulfhydryl groups. The drop takes place even after brief

- 75 -

USSR

KOLESNIK, F. A. and KOMOGORTSEVA, N. A., Voenno-Meditsinskiy Zhurnal, No 3, 1973, pp 63-64

contact with the microwave sources. Cystamine increases the sulfhydryl content in both the control group and the group exposed to microwaves (from 870 before administration of the cystamine to 990 micromolecules for the control group and from 720 before administration to 909 micromolecules in the group exposed to microwaves). Vitamin C has no effect.

UDC 612.11/.12:621.3.029.6

USSR

KOLESNIK, F. A., Professor, Colonel of the Medical Service, KOMOGORISEVA, N. A.

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- 75 -

USSR

KOLESNIK, F. A. and KOMOGORTSEVA, N. A., Voenno-Meditsinskiy Zhurnal, No 3, 1973, pp 63-64

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2/2

9.

tion in poisonings, especially in therapy, hemodialysis, peritoneal dialysis, and exchange transfusion. The next hour after the patient's admission to the hospital, the next examination should be performed.

[illegible]

organ transplantation in the prevention of acute rejection of acute allografts. In the conference of acute allograft rejection, the problems of acute allograft rejection in the clinics are discussed.

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